

LISTING OF CLAIMS

Claim 1 (Withdrawn): A material for coating a superalloy substrate comprising a preselected silicon alkyd paint loaded with a predetermined amount of finely divided aluminum and/or aluminum alloy particles.

Claim 2 (Withdrawn): A material as claimed in claim 1 also containing a predetermined amount of other elemental particles ranging from 0-15% by weight.

Claim 3 (Withdrawn): A coating as claimed in claim 1 wherein said paint is Benjamin-Moore M66-79 silicone alkyd high heat aluminum paint.

Claim 4 (Withdrawn): A coating as claimed in claim 3 wherein said finely divided particles have a size of about -350 mesh.

Claim 5 (Withdrawn): A coating as claimed in claim 4 wherein the mass ratio of the paint to particles is about 1:1.

Claim 6 (Withdrawn): A coating as claimed in claim 2 wherein said paint is Benjamin Moore M66-79 silicone alkyd high heat aluminum paint.

Claim 7 (Withdrawn): A coating as claimed in claim 6 wherein said finely divided particles have a size of about -350 mesh.

Claim 8 (Withdrawn): A coating as claimed in claim 7 wherein the mass ratio of the paint to particles is about 1:1.

Claim 9 (Currently Amended): A process of coating a turbine part which is subjected to high temperature operation during its life comprising:

cleaning a surface of the part according to known techniques,
coating said cleaned surface of said part with a slurry containing finely divided aluminum and/or aluminum alloy particles,
said slurry having a carrier of a commercially available silicone alkyd paint;
allowing the surface of said part coated with said slurry to air cure sufficiently;
heat treating the air-cured coated surface of said part to partially form a diffused coating on said surface of said part in the presence of an inert gas at about 840°C; and
heat treating in a vacuum furnace the partially treated surface of said part for a predetermined time to diffuse-bond the coating to said surface of said part at a temperature of about 1080°C.

Claim 10 (Currently Amended): A process as claimed in claim 9 in which said coating contains other elements or elemental alloying ~~additions~~ powders to improve the oxidation resistance of said coating.

Claim 11 (Currently Amended): A process as claimed in claim 9 wherein said particles have a particle size of about -350 mesh and the carrier is ~~Benjamin-Moore M66-79~~ a silicone alkyd high heat aluminum paint.

Claim 12 (Currently Amended): A process as claimed in claim ~~11~~ 9 wherein the mass ratio of paint to powder is about ~~4:1~~ 1:1.

Claim 13 (Cancelled)

Claim 14 (Currently Amended): A process as claimed in claim ~~13~~ 16 wherein the partially treated part is heat treated in a vacuum furnace for a predetermined time to diffuse-bond the coating to the turbine part at a temperature of about 1080°C.

Claim 15 (Original): A process as claimed in claim 14 wherein the part is air cooled.

Claim 16 (New): A process of coating a turbine part which is subjected to high temperature operation during its life comprising:

cleaning a surface of the part;

coating said cleaned surface of said part with a slurry containing finely divided aluminum and/or aluminum alloy particles, the particles having a particle size of about -350 mesh;

said slurry having a carrier of a silicone alkyd high heat aluminum paint, the mass ratio of paint to powder being about 1:1;

allowing the surface of said part coated with said slurry to air cure; and

heat treating the air-cured coated surface of said part to partially form a diffuse coating on said surface of said part in the presence of an inert gas at about 840°C.

17. (New) A process as claimed in claim 9, wherein after the heat treating in the vacuum furnace of the partially treated surface of said part for a predetermined time to diffuse-bond the coating to said surface of said part at a temperature of about 1080°C, the part is air cooled.

18. (New) A process of coating a turbine part, comprising:
- cleaning a surface of the part, and
 - coating said cleaned surface of said part with a slurry containing finely divided aluminum and/or aluminum alloy particles, said slurry having a carrier consisting of a commercially available silicone alkyd paint.